Left with Nelson

1. Trunk
1. pr Boots
1. Blowpipe
1. Cloak
1. hat

Name of our Indian guide
Sp- Stock- E. Si(a)- noon or
Middle of the day

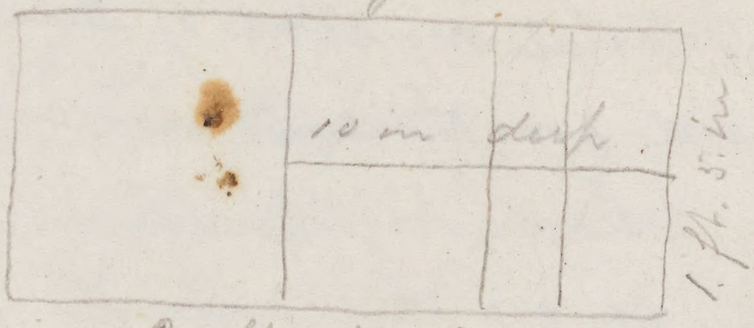
Principles of Zoology
by
Agassiz & Gould
Pictorial museum of Animated
with 4000 thousand wood cuts published
Charles Knight - London 2 Vols
at 27 Shillings - 7$

Arties's (E.T.) Antediluvian Phytology
fossil remains of Plants —
25 Plates - Cloth in board at 15.5 - about $4

any European works can be obtained
by Ordering from Wiley & Putnam New York

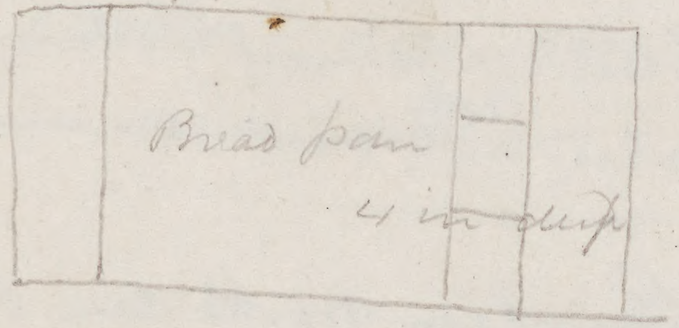
Camp chest

Lower part



2. ft. 1. in long & 15 in deep

upper divisions



	in R	L.R.	A. Dr L
14.	7.20-7888	539	5.6.5. 5-6.5

Polish Porphyry &c

Grind down with No 1. Emery

finish with flour emery

Polish with Turkey or Arkansas

stone

Date	Time	Temp	WB	Wind	Cloud	Course	
May							
30	12 M.	77°		I. N.	2	N.W.	Oscola Mill St. Croix
"	6 P.	79		0	4	0	2 M. below Oscola mill
31	5. A	55	52	0	6	N.E.	" " "
"	12 M.	71		S.E.	6	0	St. Croix R
June							
1.	6. A	61½	59	0	6	E.	Rain "
"	5. P	68½	64	0	6	N.W.	rain since 12 o'clk
2	6. 15 A.	56	55½	N.2	6	N.2	rain last night St. Croix
"	3. 40 P	80	61	0	2	N.W. 1	St. Croix R
"	7. P	68		S.S.E.	4	W. 1	
3	5 A.	57½	57	S.S.E.	3	S.W. 2	Rain last night St. Croix
"	12 M.	71		N.N.W. 4	1	N.N.W. 3	Sun Rise River
"	3½ P	70	59	S.W. 4	1	S.E. 2	" " "
"	6. P	62		N.W. 2	1	N.W. 3	" " "
4	5. 20 A	48½	40	0	0	0	" " "
"	12 M.	63		N. 1	6	N. 1	" " "
4	7. P	57	50	S. 1	6	S. 1	Raining Sun Rise R
5	7½ A	56	49	E. 1	6	E. 4	Raining "
"	12 M.	59	56	S.E. 1	6	S.E. 3	Raining "
"	6. P	60	52	W. 1	6	N.W. 1	Raining
6	6. A	53½	52	W. 1	6	S.W. 1	Rain Last night "
"	12 M.	59½	66½	0	6	S.E. 1	Mouth Sun rise on St Croix

Date	Time	Temp	WB	Wind	Clouds	Course	
June 6	7. P	55	53	N. 2	6	N.E.3	Raining St. Croix R.
" 7	7½ A	61	54	0	6	E. 2	Raining " "
" "	12 M.	69	52	N. 1.	6	E 2	Raining " "
" "	6½ P	63	57½	N.E.1	6	N.E.5.	Raining " "
June 8.	5. A.	50	49	0	0		foggy "
" "	12	64	58½	N.N.W.1	4	W. 2	Clearing away "
"	6 P.	56	54	N. 1	3	W. 1.	— "
" 9	7½ A	50	49	N. 1	6	N.W.4	Raining "
" "	6.25 P	58	50½	N.W. 1	3	N.E. 4.	clg in N.E. St. Croix
" 10	6½ A	50	49	E. 1	1	W 2	" "
" "	12 M	66	56	S. 1	4	S 1	" "
" "	6 P	62	59	0	6	S.W. 1	Threatens Rain "
" 11.	7. A	61	57	S.E.2	6	S.W. 1.	Rain in night "
"	12 M	65.	61	N. 1	6	S.W. 1.	Kettle Riv
" "	6½ P	62	60	0	2	S.W. 2	" " "
" 12	6. P	56	54	0	—	0	foggy " "
" "	12 M	63	59	N. 1	5	N. 2.	" "
" "	7. P	62	58	N.E. 1	2	W. 1,	Kettle R. 7 M up
" 13	7. A	53	51	E. 2	6	E. 5.	" " " "
" "	12 M	59	57	E. 1,	6	E. E. 5.	Thunder show. "
" "	6. P	67	66	0	4	S.W. 4	" " at 5. P

Date	Time	Temp	WB	Wind	Clouds	Course	
June 14	7.30 A	56.5	54.5	0	4	W. 3	clearing in W. Kettle R
"	11.5. A	70	59	S.W 4	4	S.W 2	" from S.W.
"	6. P	59.5	59	W. 1	3	S.W. 1	Rain at 4 on K R. " "
" 15	6. A	52	49	S.W. 1	0	0	Kettle River
" "	1. P	79	56	0	2	W. 1	falls " "
"	6	67.5	58	0	0	0	upper falls K. Riv
" 16	9. A	52½	51½	0	2. W	W. 2	rain till 9. A. " "
"	12½ m	71.5	61.5	S. 2	1. S W	S. 1	upper falls Kettle R
"	6 45	6.50	60	S.W. 1	2. W.	S.W. 1	" " "
" 17	6 30 A	61.5	60	0	1. W	—	" " "
"	1. P	80.	70	S W 3	4	S.E. 4	" " "
"	7. P	73	68	S. 2	6	S.E. 4	" " "
" 18.	7. 12 A	66.5	65.5	S 1	6	S.E. 5	sample on Thunder shower at 4.30 K R upper falls Kettle
"	12 M	77	74	S. 1	5	S. 4	" " "
"	6. P	79	72½	S. 1	1. W	S. 4	" " "
" 19	6 A	73	70	S. 1	5	S 4	" " "
"	12 M	83	74.5	S 2	3	S 3	" " "
"	6. P	80.	74	S. 1	1. S W	S. 4	" " "
" 20	6 A.	70	67.5	0	0	0	" " "
" 21	7. A			1	S S E		morning cloudy rain from 2½ P M. yesterday
"	12	71.	68	2	S E		till five this morning.
				Rain at intervals during forenoon			

Date	Time	Temp	WB	rain	clouds	course	
June							
21	7. A	68	67				Clear & calm
22.	6. A	57	56	0	3	SE	
—	12. M	76	62.5	0	2	Ar.	Lower fall Kettle R.
—	6½ P	72	63	0	S.W.	W.S.W.2	Thunder shower coming from N.W 15 m. below Kettle R
23	6. A	68	64.5	0	5	W. 1	Did not Rain last night
—	1. P	83	70	S	4.5.W	S.W. 1.	3½ m. Above Kettle R. at St. Croix
—	7.40 P	75	62	1.5	5.	S.W 1.	10 — " " Thunder shower to N. of us
24	6. A	64	58	0	0	0	Did not rain last night
—	12 m	78	64	1. N	2	N. 1	11 m. above Kettle R. Last Camp
—	6 20 P	71	65	0	1	—	20 m. " Last night camp

Started from New
Harmony May the 5th arrived at
Mt. Vernon at 1. oclk. left
there on board the S. B. Melodeon
for St Louis at 8. oclk P. M.
arrived there at daylight on
the 10th inst. Cholera prevail
-ing very bad saw one man
taken on the Street.

May 11th Dr. Norwood, Capt
Owen Mr Pratten & Myself
Started at 5 oclk P. M. on
board Dr Franklin No 2. for
still water. Dr Shurm and
Dr O, Mr E. To go up Missouri By Mr Mary Lasmoine
to follow in a few days.

May 16 Arrived at Still Water this Morning
had no cases of cholera during our
trip. Temperature still disagreably
cool in the mornings and evenings.
Vegetation unusually backward. Hills
look naked and bleak as if winter
still remained. We arrived here

last Spring only one day later in the month than this, yet the trees were putting forth their leaves the flowers blooming & everything looked like Spring. I walked out this evening saw a few flowers in bloom but they looked stunted and small. saw the Golden Corydalis. (C. Aurea) Rock Cress. (Arabis Lyrata) Meadow Rue (Thalictrum Anemoides) Bell wort (Uvularia Perfoliata) wild Strawberry (Fragaria Canadensis) Liverleaf (Hepatica Triloba) in bloom, but they looked sickly and stunted.

last winter was an unusually cold winter here. there was a three foot fall of snow in Oct. which remained till April.

The Golden flower in moist places about Stillwater and lower down on the Mississippi, so much like a ranunculus in its general appearance is the Marsh Marigold (Caltha Palustris)

May 17th Saw in flower the Pasque flower (Pulsatilla Patens) a beautiful early flower—its seed long awned

21. Dr. Shumard arrived this morning Cholera still prevailing in St. Louis

3. deaths on the boat coming up.

I Started at 10½ A.M for the falls of St. Croix to purchase a canoe. Characteristic flowers in bloom on the road up. Bell flower (Uvularia perfoliata & U. - with white Trillium (T. Erectum. arrived at the falls at 5 P.M. Left my horse on the West side an crossed over. Can hear of no good canoes. too tired to look for any this evening.

22d rained all night - Still raining & looks like it might rain all day.

23. Rained all day. Cool wind from the North. Purchased a canoe.

24th Morning clear & cool. frost and thin ice last night. got a man to ride my horse down & came down in the Canoe to Stillwater. clear all day.

25th Cool morning. Dr Norwood & Capt Owen Started. we Started up one load of our luggage, Provisions &c the Canoe is to return & take us up on Monday morning. Mr Rattan sick

May 30th Starts from Stillwater at 8. o'clk A.M. dined on the R. just below Arcola mill at 12. o'clk, flying cumuli. Wind North 1. Temp. 77°.

The Current being strong we only made 18. m. and Camped on the L. shore in a low bottom at 6. o'clk P. Temp 79 Wind 0. Cloudy- Musquetoes very bad.

May 31. Started at 6. o'clk A.M. Sky hazed over with Cirri Stratus. Temp at 5. o'clk A.M. 65. W.B. 52. wind 0.

Dined at 12. o'clk on the Left Shore 2 m. below falls. still Cloudy Temp 71. wind S. S. E.

arrived at the falls at 2½ o'clk. the men being tired after making the portage we concluded to camp for the night

June 1. Morning cloudy and raining. rained all night. Temp 61½. W.B. 59 wind 0. Clouds Cumuli Stratus 7. Course do. E. 1.

Collected some Lingulas & Orbiculas, from the rocks below the mill

at 5. o'clk P. still cloudy, clouds Cumulo strata. rain several times during the day. Temp. 68½ wet Bulb 64°. wind 0. Clouds 7. Course of do N. W. 1.

Saturday June 2d

Morning cool & damp- heavy fog- cloudy wind from the north. Started at 7½ o'clk A. Dr S. M. P. & myself walked around the falls & Rapids leaving the men to bring up the Canoe & luggage- 3. Portages to make here within 2 miles. 1. at the falls 1. at the mill & 1. at the upper range near Portage

Fine perennial plants seen in flower this
forenoon Lilium Grayanum & Cypripedium Mac-
leanae — Over-hot hard work to tow the
Canoe on the rapids. An Indian and
three Squaws with Bernal Chilcan going up
the rapids with 2 bird canoes at the same
time

Stopped to dine at 12 M. 7 miles
Left about 1 mile above the head of the
rapids. Was told by Indians that the
rapids Was head to Cordell much of the
way over the rapids where the Current is very
Swift and the bottom either Rock Boulders or
Rock in place. at one place we passed Small
large masses Rock as large as a Small house in
the river. Between these rapids we occasionally
saw along the shore the Stratified Sandstone.

Here above the rapids the river is a very
pretty stream. About 150 to 200 yds wide. The
valley is about one mile wide, bounded
by low hills principally Drift mostly gentle slopes, clothed as
well as the bottoms with Aspens, Oaks
ash Elm & other small growth.

Clear excepting some flying Cumuli - Sum-
mer - Temp 74.

Camped for the night at Some Shanties on
the Left about 15 Miles above the falls.
River today Straight and pretty above
the rapids - Banks clothed with a luxuri-
ant growth of Maple Elm, Linden oaks
ash. hills on each side about 100 ft
higher chiefly clothed with aspens (Populus
Grandidentata) & P. Americana. Saw immense
quantities of the Erikson Erection in flower
along the Shores, — also for the first time
in this Country Similar Erections
Temp 7 P.M. Temp 68. Wind S.E. Clouds 0
Course of day N.W.

Saturday June 5

Rained nearly all night last night. at 5
A.M. this morning Temp. 57½. and Bulb 57.
Wind S.E. Clouds Cumulo Strato 4. Course of
day N.W. — Commenced Painting this morning.
Started at 6 A.M. about 4 Miles
Above the river makes a bend towards

the 4th inst). Here we passed the mouth of a small stream that puts in on the Left. The Rime Fevers of a kind we had caught a glimpse of made below. Exposures on the Left at the Previous Rapids the hills are not so high here the bottom on the other side clothed with same species of deciduous trees seen below. Have seen the mouth of Jim on left the Trap rocks appearing a few boulders along the shore. Fishing Creek, Brainerd Pike Antelope & Pitch Pine associate sentiments in the characteristic plant in Rhea in the bottom - Farms - Planting Potatoes Hoeing corn and Cultivating Tobacco

At 11 m. 30 s. came to the mouth of Swan River which puts in on the R. It is a stream about 4 rods wide 4 ft deep, water more muddy than the St. Croix. Soil rich with many rapids. Saw White Pine (Pinus Strobus) and Common Birch (Betula papyracea) on elevations. Started up Swan R. Made application at 12. Pr. Chart & Compass. Saw in flow

low prairie prairie, some (for this Region) strong mud Bottoms from N.N.W. surface of the country here covered with rich deposit of sand and gravel with many Boulders of Trappean rock

About one mile from the mouth of the river coming to the South have seen a small pond or lake on the right shore of pretty clear water. I saw in flower in it the Yellow pond lily (Nymphea lutea) and along in the openings the Red Cudweed (G. Uliginosum) Some tree or two in a half miles beyond this we saw at current plane in a low bluff bank a Red Clay, or Ochrey deposit on the left shore. It was seen down as low as 4 Feeting beneath the water level and at one place rising as high as 15 or 20 ft above. It is distinctly stratified in thin seams some of deep brown or red color. Covered by rich alluvial Soil. It seems to be older than the drift which overlies it but we have no means of determining to what formation it belongs. The Country here does not seem to have an appearance as does

down, the ground this evening Limestone, Clear Rock, White Walnut &c at one point a formation elevated about 20 ft above the river from the left bank of the river, back. Here I saw a few scattering Oaks, Aspens, & Pines. The Soil deemed better than below

After leaving the small pond or lake Mountains below the river is not near so full of rapids is more crooked.

At 6. o clk P. we stopped to camp for the night On the Left Shore in bend. Therm. 62. Wind N.W. 2. Clouds 2. Course of the N.W. Mosquitoes very bad this evening My forehead covered with bites as large as the end of my finger by their bites.

From the mouth of this stream up to the little Lake mentioned above the whole country seems to be made up of Rapt. chiefly sand gravel and boulders of Trappean rocks and has a barren look. Hemlock, Aspen White Pine and Spruce trees, which are very scattering

I also saw in flower the same plants I saw last year on the Rapt ranges at the falls of St Louis which I supposed at that time belong to the Ornithus Family from the form of its leaves, on finding it here in flower I determined it to be the Clintonia borealis of Raf.

Monday June 4th

Therm at 5.30 A.M. 42° Clear & calm Clouds 0. Course 0. Morning fine & chilly. Started at 7. o clk A. had to cut our way through several drift piles after going about two miles doubled the corner and had to stop & Gum Rivers very low. Mosquitoes very bad

Stopped to dine at 12. On the R. having only made about 4 miles since morning on account of drift in the river. Took the left [illegible] Small river
-nel of an Island exposure of the red marl no only rare Alluvial bottoms which are flooded with the Same two seen yesterday morning Therm 83° pale chilly winds at 1 hour Clouded up.

At 6. P.M. we came to Rapids or Cataract on the right opening which is elevated some 65

fut above the river. Although the bluff
is rounded at top it could not see the red
clay exposed, but from marshy nature of the
lower part for some 25 or 30 fut up I should
no doubt but it extends up to that height.
above that it is all drift. We saw in it
boulders of granite, quartzose, porphyritic
&c &c the rock in the elevation is doubtless
coal, as I saw growing here ~~some~~ small
oaks ~~and~~ part of the small sycamore
pecan, saw one flower here the Sycamore
Orchid Panicle erect (
) Lanceolate (Panicle or Raceme (
) Corymbose Monandrian Diadelphian
Section and centrepetal the plant near the
river a species of Eupatorium
Clear for a mile or two with the same
Elevated
flora, Prairie in the west and the Lower
Cretaceous (thickly pebble-ous bed) on the East
of Creek Cleared (dense and rich) Left there in the bottom forest
evergreen Tall cane grass. at 7 O'clk P Temp

5 A. M. Rain 57 Wind South. Clouds 7. some
of do East.

Sunday June 5th

Rained all night and steady raining. At 7 A. M.
Temp 56. Bar 29.49. Wind S. E. Clouds 7. covered
of Ed — often raining from our tent this morning
we discovered the water had run in under
our beds and was standing in puddles, but
Frank & our Indian with the ~~flour~~ cloth
our blankets remained dry enclosing a little
around the edges. We now discovered that the
ground on which we ~~are~~ camped is merely a
scum of black muck coated over by a thick
coat formed by the grass roots. They like the men
shake on the thick they are stepping to make
a fire of & cook breakfast, shake the surface
for some some or mud.

12. Still cloudy Temp of wet Bulb 56. Wind
S.S.E Clouds 7. Breeze of S.S.E. ~~Left~~ Left
Camp a May a little as Temp the rain was
over, and as the mud & water
disagreeable place we ~~encamped~~ Started

and as we had gone as far as we thought necessary up this stream we struck down and started at 9 O'cl & down the river again and as the wind had been blowing hard last night about fair weather we could easily down the river as fast as we could go so far we had camp formed Night before last (and as we had not gone far up) it commenced raining again and we travelled [illegible] and were compelled to stop and gone in a cove during rain, we could not camp [illegible] on the ground and camp up. After proceeding the course we came on about 4 miles & camped on the left on my good ground.

at 6 a.m. K Temp 52. Mt Bulb 52. wind NE 1. Clouds 7. course of the N.W.S. continues a dizzling rain.

Wednesday June 6th

Rained all night. at 6. a.m. K Temp 52°. Mt bulb 52 Wind east 1 Clouds 6. course of the S.W.S. Sprinkles rain occasionally but looks more like it would clear away

continued running along with the course and at 8 A.M. at which time I had

The river here was steadily we down we down gently not suppose that [illegible] many a hard day going up. At a few minutes after 11 Oclock we arrived at the mouth and started on up the St. Croix, here we collected some fine specimens of the Bivalves, & Rostro and U. Figurens the two former having beautiful Nacre.

At 12. a.m. K we stopped on the left shore. We dine about 2 miles above the mouth of the St Croix Rising seven here we found in a little pond Physa Elobra, Limnea dolyas, & Animal Species called Succinea Same as seen in the bottoms lower down no rocks exposed here. Country drift. Temp 59°. Mt bulb 56. Wind 0. Clouds 6. course SE, 1.

Came on up about 2 miles further when we were compelled to stop and camp at 2. o'cl K on an Island by a storm rain which

Low continued up to this time (7. calk P) with but little intermission Temp 55 wet bulb 53. Wind N. E. Clouds 6. Course N. E. 2

Thursday June 7.

Rained all night last night very hard & Continued a drizzling rain this morning. At 7h Calcd Temp 61. wet bulb 57. Wind 0 Clouds 6. Course E. 2.

See in Flores near ope camp Smilax herbacea Hydrophyllum virginicum. Arctia Lanigera, Asteria & Pennsylvanica

At 12 Calk Bar. Still raining. Temp 69. wet bulb 52. wind N. 1. Clouds 6. course E. 2. = Check 2. Raining. Temp 55. Wind 0. Clouds 6. Course 0. 0. fair chilly. Look. a laugh on might be retained here by 10m a day tomorrow

Friday June 8th

Morning foggy at 5 o'clk. Temp 55 wet bulb 49. Wind 0 Clouds 0. Foggy. Started at 6 Calk. river more full of Islands and wider. Trees below, bank elevation above the river not so great as below grove same as before mentioned with mosquitoes along the margin of the river Pinus Strobus on the elevations back Pinus resinosa, but as far as can be seen back decreasing in abundance. No exposures of rocks bottom Alluvium & drift hills drift. Many large granite boulders in the river.

After going about 5 miles stopped on the left shore to dine. had no rain since on started. Clouds lifting to back away Temp 61 Wet bulb 58 Wind N.N.W. 1. Clouds 4. Course. Saw here much of the Smilax Herbacea ( ) and found in flower Yellow Honeysuckle (Lonicera flava)

Stood 1 m above the (11 m below Hall's Ferry) came to a low bluff (10 ft) of Sandstone formation. All of the hills & upper part of that formation Temp in creek and returning from hills 60°. very swift. Saw a little above the mouth

of Sand Sandstone on the other Side
the river saw in places low the Hills
Rocks (grey) Siliceous Sandstone) not
low as Indian going down in a Canoe (Canoe
also was down at 3 P.M.)
and great quantities of the yellow Clay
from which Indian Like bricks. Some 6 or 8
Miles further up we saw on the left shore a
Bluff of the same Coarse Sandstone some
hundred (100) feet or 60 ft. high. On this we saw
Partridges with red Eyes, Huckleberry &c
Came on up and Camped at 6 o'clock
on the Right shore in a low bottom
here saw to day same as mentioned
with a greater Abundance of white
Pine with American Arbor Vitæ
all the high ground seems to be either
Pine forest or barren of sandy Pines
Black cherry oak &c. here observed we
are Camped in the bottom and Plenty
Huckleberry, Vaccinia resinosa and Rhus
I have seen of every Plant
on this River. Mr collected

a fine Lot of Insects & Vegetables today. At 9 P.M.
P. Lamp 58 and B 29 Wind N.W. Clouds 8.
Course N.W. Excepting of clear weather

Saturday June 9th

Commenced Raining Last night about 12 o'Clk.
and continued to pour down incessantly till day
light. A fine mist till falling. At 8 o'clock
Lamp 57. Wet Bulb 56. Wind N.W. Clouds 6. continued N.W.
continued to sprinkle till about 10 o'clk A.M. when
it broke away a little and we started on &c. We
had only gone a short distance however, when
a heavy Squall of wind Came driving from the
North East and nothing everything like a head wind
but we Continued on up to the mouth of Snake
River where we, a small hunting Lodge, with, as
usual, a lot of Indians hanging about & Camped
near. Dr Suckley mine was my Log and great quan-
tities of saw logs floating down with Last night
& to day. We Concluded to
remain here till they run out which will
only be today about 11 or 12 hours. The current

Leaves in Black and Red form. Balsam Fir.
Abies Balsamea, also Spruce (A. Alba
and Larch same appearance for the
Leaves Common flowers in Heads Rose Pollinia
Fruit Cone, T. Common, Downy Yellow birch (B.
Lutea and) Maples Sugar (A. Saccharum Acer Rubrum
Common Mountain) Hemlock Spruce
(Common Conifers)

At 6 A.M. Temp 57. a. 2. rain wind N.W. 1. Clouds 3.
Course S.E. by E. Sailing away in the N.E.

Tuesday June 10th

Bright sunny morning. At 6 A.M. Temp 55
not Bath 49. Wind E. 1. Clouds 1. Course N.

At 12 Bath, Temp 61 not Bath 58. Wind S.
Cloudy Course S.E. walked up on the
pine barrens above the mouth of Little
River today. The country here seems to be
generally elevated about 70 feet above the St
Lawrence, Surface slightly rocky & Gravelly
Principal trees are Common white Pine, Red &
Mapleau Large Trembling & Common Balsam &
Red birch. In the river valleys the
Common deciduous trees of the Country
Balsam fir (Abies Resinosa) white Spruce
(A. Alba) Tamarack (Larix Americana)
Saw on the barrens today the smallest
Common, and buried minie paper Bullets
&c at 6 P.M. Temp 62. Wind S.W. 1. Cloudy
6. Course N.W. 1. Employed by all day meeting
for the Saw Logs to run out of Smoke river

Monday June 11th

Rained last night. Temp. at 7 A.M. 61. wind S.
wind S.E. 2. Clouds 6. Course S.W. 1.

Employed part the a Mountain Spruce last
night. In getting up this morning I heard a
hen quacking in the Evergreens but didn't pay much
attention supposing what it must be
of the Evergreens ~~which was~~ I was surprised
shortly after by the half hen Evergreen had made
a square box nigh unto us his father had died
a few weeks back the one morning his death.
I brought him a specially formed watch and
a suitably mounted Specimen for the death
of one whom she had never seen.

As [illegible] would not still following mist of Snake river as regularly as one do [illegible] to go on up the [illegible] and as [illegible] Shortly after we return.

At 8 h. we left the islands both Reany and we started. The Indian, [illegible] had given some small [illegible] volunteered to assist us over to the river which commences about two or three miles above the mouth of Snake river. He did us good service by directing us when the channel lay and taking the oar all himself paddling like a boss. This is the first time I ever saw an Indian work. We had quite difficult the river being [illegible] and the current very strong. About one mile above the mouth of Snake river there is an exposure of [illegible] which is occasionally at different places up to the mouth of Kettle river. The cafes here are doubtless caused by this outbreak of [illegible].

As we were [illegible] along up one of the rocky places in the exposure we saw a fine buck swimming across the stream not far a head of us. As the current carried him down [illegible] we were quite near us before he reached the other shore. The Indian [illegible] of his gun to shoot it, but a fine mist that had commenced falling soon after we started had dampened his powder & would not fire.

Came into Kettle River about 11 a.m. [illegible]

Stopped to dine [illegible] on the right shore, [illegible] which are some 6 miles long. Temp 65. wind N.W. Clouds & cum. N.W. mist falling.

Whilst we were eating dinner there came on a hard shower of rain making it necessary to pitch our tent. The rain continuing we were compelled to camp for the night frequent hard showers ake the evening.

At 5. o'clk. Three Chippewa Indians came to our camp. They are camped a short distance above us. They are good looking Indians. They are not such beggars as the Spokanes. I think them superior to the

A. Sackrison

Here we saw the first Sugar Maple, I have seen forever in the river bottoms of the N. Carolina in abundance on the St. Croix down Wisconsin. Most of the other deciduous trees common are here, with all the evergreens seen in the St. Croix.

Tuesday, June 13th

Sth. calk this morning. Temp. 56. wet bulb 54 Wind S. Clouds — Light

Sh. J. calk we started on ap. River high seems larger than the St. Croix — full of bad rapids. had to coard. at one time when we Corded our Canoe, and our boatmen broke his Pole, and we were forced coard Considerable to the Coard and Coard down with great velocity, the there were some dangerous rapids below, against which the Coard was drawn with great force, and we were in much danger that fearles men of us was the Steersmen Coard the head of stream and every man wiped a Paddle and paddled for life. for some time all our exertions seemed to have little effect. I thought we could certainly be dashed to pieces against the rocks below, but we succeeded in making the other shore above them. here (2) or four months we saw Several Low exposure of Trap on the left shore rising some 8 or 10 feet above the water. This Trap seems much more inclined to disintegrate than that at the falls of the St. Croix. be more Conglomerate. often presenting pure specimens of Crystral rocks.

Not far above this these rocks are exposed on the Right shore forming a bluff from 10 or 12 feet high. Just above these we Came to Chippewa Lodges. On coming up to them we saw the same 5 Indians that visited our Camp yesterday evening. Many Squaws and Children — Some our Indians, Friends Family who had left our Camp yesterday morning found us again. A short distance above this we stopped and dined on the left shore at 12. A. M. Temp 68. W. B. 57 Wind N. W. Cloudy 5. Course N. W. 2.

about 2 hundred yards above where we drew the traps across on the left side about from the water edge about 18 feet. Lake the appearance just below the place where the Indians were camped, is a terrace by cut and horizontal veins of calcspar. It is also very abundant the cells being filled with a soft greenish mineral like chlorite, & pebbles. In other places it is brought coloured with the mineral of a greenish colour. The whole disintegrating easily forming a bright red clay.

At intervals other points up to where we camped for the night we saw the Drift layered along, but very little above the present high water line. At some places it shows a conglomerate structure as though when in a fluid state it had enclosed water worn pebbles. Striped & scratched stones always to be found on the upper surface. As you pass down it becomes more & more free from pebbles.

we had great difficulty in getting up the rapids today, only made about 7 miles although the men worked very hard. The Indian worked with all his might the whole day. Here where we camped white oak, red oak, canoe birch, bass tooth poplar, small leaved, do rafter soft hard maple

The whole surface of the country along here made up of boulders, gravel & sand, with numerous ponds small ones - in a word it is a worthless country only for its pine timber, which is not very abundant

At 7 P.M. Temp 62. rel h. 58 min N.E.1. Clouds 1. Cirrus N 1.- mosquitoes intolerable

Wednesday June 18th

At 7 A.M. Temp 53. rel hum 87. min E. 2. clouds 6. Cirrus 6. S. Thermometer min. Rose very cool & good sleeping night was I think with greater velocity than any since I commenced ascending the Saskatchewan River.

At our camp ground were Stone

the usual quantity of labour this morning in Gumming &c we did not get ready to start till about 8. oClk. we had only made about ½ a miles after about one hours hard labour, when we dragged our Canoes so badly that we had hardly time to run in to low bottom and throw out our affairs before the water rose to near 6 inches in the canoe. Whilst the men were fixing the canoe three Canoes of a hard Tomahawkian from the S. E. and we were compelled to pitch our Tent, although the highest place we could find was not elevated more than 2 feet above the river ~~this~~ it ~~morning~~ last. At 12. oClk. Ther 89. Wt bulb. 57. Wind S. W. Clouds C. Cumo S. E. S. Raining.

At 1 oClk P. the rain ceased and we started after we had gone up about ½ of a mile we were much pleased to find that we were over the rapids and in good smooth water. Here we found the river much wider - filling the whole valley from hill to hill. Up-stream. Six ways are seven one ascends three rapids before in a bark Canoe at so high a stage of water. We think we have come over the falls, where we expected to make a portage. The water being so high that we could not distinguish it from other parts of the rapids.

Immediately after coming above the rapids we the bottoms again clothed with a fine growth of Soft maple (Acer saccharinum) Elm, Ash, Hackberry, Lynn, oak & with scattering white & red pine Balsam fir, white Spruce, American Arbor vitae.

After going on up about 0 miles above the rapids we came to an exposure of Rock on the Left shore rising about 8 or 10 feet above the present water level which is exposed along a Low bluff, bearing S.S.E. for some ¾ of a mile. and Rising above Placed 25 or 30 feet above it on a ridge on the opposite side the river in a S.S.E. direction, I have no

doubt but it is undivided by this same range of trees. The growth on this range is very distinct from that in the valleys. Bony White & Red Pine. Balsam fir, white Spruce & both scrubby and deciduous trees. I saw here near the Camp the Mountain maple (A. Spicatum) so we are about stopping to examine this range then came from the S.W. as thunder shower, which hurried us to get our Camp fixtures before it coming at 6. P.M.K. the rain ceased and the Sun shone out quite warm. Glad it being late and everything not so stiffened for the examinations of the rocks till morning.

Here we found the mosquito is more numerous & annoying than I have ever before seen them. Often 5 to 6. 500, seeing that they annoyed us very much, built a large fire and threw upon it, several double handfull of the dead leaves of the Aries Racemosa, which emits dense clouds of smoke. Then gathering a large bundle of green timber

he stood near the fire and swinging them backwards and forwards over it, raised clouds of smoke in every direction, then seating himself in the midst of the surrounding smoke to stir up the mosquitoes, drove most of them away. When we are camped privately and permanently I will erect a structure - Have cut one down to smoke a fire that was only 15 in. in diameter and measured 150 feet in length. A.L.6. P.M.K. Temp 67. Br. B.65 Wind S. Clouds 4. Cumuli S.W. 2 Thunder Shower at 6. P.M.K. R.

Thursday June 14

Light showers of rain short day light. A.L.7. P.M.K. Temp 47 to 57 Met bulb. 54.5° Wind N. Clouds 8. mist 3. Apparently clearing in the N.

Our Trap is not tenanted by more Cryptotkine in place than any I have seen being principally Composed of red feldspar and a dark mineral like Hornblende in angle. At this place it more compact & of a brownish red Col

And either among dolomite or cellular. It is all with flakes with grains of mineral, a Crater with a white mineral. After finishing our observations we started at S. 0 E. 1/2 K.

About one mile above the river bends around to the Right affording the Esquimaux an opportunity of seeing us as we saw him on the other shore. A corresponding elevation clothed with the same timber. Three of the Esquimaux on the left bank. We gave them some flowers, powder and lead shot enough to last them a month.

At 3 P.M. above was compact (low) night we saw another appearance of water on the left side, (about 2½ ft high) apparently the same ray seen when we commenced. We could not ascertain it as there was a long slough between us and it.

Valley seems to be generally less than a quarter of a mile wide, bounded by hills not more than 25 to 30 ft high. All the valley and pitch water up left a few long strips of islands which are not more than one to two feet above water. Smooth in valley came in sight yesterday with a accurately more of the Arbor vitae. Near the place where we saw the last mentioned trees, on the Right side [illegible] the banks of current etc changing ledges surrounded by several feet water. Near by was a small knoll still covered with black earth, over which stone was flying a small white flag, denoting it as the resting place of some poor Indian.

At 11.5 walk we stopped and landed on an Island. Temp 70 mt bulb 59, wind S.W. a chain 4, course S 70 W. 2

At 1.0 walk we came to another bed of rocks which required all our power to pass the water being so high that we could not come close enough to the shore to reach the bottom with poles on account of the stones and mud. Have no doubt but there is a small portage directly [illegible] we could not see for the high water. There are two small Islands here. The rapids about of a mile long. We make 2 hours

getting over them. At 4 oclk, we had a shower of rain from the S.W. At 5 oclk when we were about 4 miles above the last rapids, our attention was attracted to the left shore by the sound of a water fall. on going over, we saw at a distance of about 60 yds from the river a mural over which a small stream of water falls. They encompriment of rock, betraid a growth of Trees, that would have hid them from our notice had it not been for the perpendicular part of the fall & the sound of the falling water. On landing there we found it to be a reddish Sandy stone in tolerably thick and compact strata which are much broken and fractured and have an inclination of some 6 or 8 degrees to the E. or E.S.E. It is in some places shelly between the thicker strata, here we saw on the thin slabs distinct and beautiful ripple marks. It is generally very hard, but at some places it is more soft and friable like beds of formation No 1. but it differs in many respects from it. they generally

cedar and much harder, It is also covered with lichens similar to those usually found on trap. Think it likely the rocks we saw at a distance about 3 M. above where we camped last Night may be this same formation.

As we wished to spend some little time in examining the rocks we camped here for the night. Saw here in flower among st many others, the beautiful Lodica. (Cypripedium Candida) or Standup Indian Slipper. gathered some fine Club mosses &c.

Friday June 15th

At 6. oclock Temp 52. mt bulk 49. wind SW Clouds C. Comm C. Started at 6h oclk. about ½ a mile above Camp we saw what a hurricane had (not going back) Crossed the river, coming from the South. Its track was about 150 yards wide. It penetrated anything in its course scrapping off and uprooting the largest pines, balsams, Spruces &c (the tops of which were)

About 1½ miles above this we came to another rapid about ¼ of a mile long

the south second bay enough low to
swamp a Steamboat. We had to make
a portage around this over the most hilly
of ground, bare rugged Piles of Sandstone
which was slippery & covered with round
& so Sharply corresponded with Baldwin, Mich
Capt. W. that it was necessary to cut a road
round. The old Sandstone is exposed here
on both sides say 20 feet above the water
many Pot holes all now dry. Boulders
extremely bad - they are always more thinning
on the dangerous part than anywhere
else.

After making our portage (which
we drove in 2 hours) we went on about
½ a mile further against very swift
water, to a perpendicular fall of 8
feet over the same Sandstone, here
we had to make another portage of about
quarter of a mile. We stopped on the
Right shore to drive out 12 cattle before
making the portage,

Just above the river Commences to
makes a short curve to the left
descend it is not more than 40 yds wide.
Walled on both sides with perpendicular
sandstone rocks some 10 feet high.
At first there is a gradual slope
of some 5 feet in about one hundred
yards down to the Island where there is
a perpendicular fall of five feet. The
river is divided before making the plunge
into two streams by a small Island of
naked sand rock about 60 yds wide. It
is nearly of a circular form and about
8 feet high nearly flat on the top with
small scrub Cedar, balsams &c
growing on it. The principal fall is on the
same as seen on the right (Parent sign)
At the narrow point left above the falls
the water cuts a race on the Right
side, at high water, where it has cut
a deep channel through the rock, which
could be made use of when the first mill
is made in the world at a very trifling

offerens. At anc a.c.R. Temp 79. N. N. W. Wind 0. Clouds 2 Cirrus N.1.

I saw here in the camp shady pine woods. Many species of insects, Coleoptera Orthoptera Hemiptera which were very interesting and new to me. but I had not the time to examine them or a means of preserving specimens. Also the pretty little frogs and toads. (R. Pickeringii)

About 5 ft of the lower part of this fall seems to be of Trenton age than the upper. Saw here in a dark cavern in the rock on the left shore some large images of Ice

At Ft. Dalles. Temp 79. N. D. 56, Wind 2. Clouds Nr. 1. Did not get ready to start after making portage to go running Canon till 4. P.M. when we started on up. Found Stone upheaved on both sides of the river all along to where we camped at the foot of the upper falls where we camped for the night although it is only 8 miles above the lower falls, having arrived there too late. At some places between the two falls we estimated the cliffs of sandstone to be as much as 170 feet high. when we examined (about 1 m. above lower falls) they were much cracked & fissured also about as though disturbed by upheavals, although they did not seem to have any regular dips. I saw here in a deep chasm large images as of Ice.

Upon stopping below the upper falls to camp the men took out the load from the canoe, and being in on the bank started on up to a better place to haul it out the water being very swift one of them had hold of the cords while another (Barnes) remained in the stern to steer, and another was pushing out with a pole. Dr. S. & myself were standing up on the bank

Some 30 or 40 yds from the wreck where Akers was making a fire.

The Canoe went safely along till they came to large Sunken Rock near the Wreck over which they now about to haul it although the water was a foot or two full of Some 12 or 18 in which caused a tremendous break just below, where about 1/2 feet from shore there was a Crack or depression in the rock where the water was deep and they were Trying haul the Canoe through. This being too necessary as they hauled the bows up on one side of it so as to bring the other side so low that the water poured in and she turned over in less than a second. Jarvis started to swim to the bow but the canoe too quick & down he sank. I called to others to swim - pole and run down as fast as I could; by this time the man who held the rope let go and the canoe whirled round for a minute in the eddy and then began to float slowly down bottom side up. By the time I reached the edge of the water I saw Jarvis come up. Amidst the boiling foam and seize the side of the canoe but the water nearly tore about so he could not keep his head above water, I seized a long stick and held it out to him he grabbed the end of it but it key dropped back and down he sank again beneath the foam. I heard Mr Pratt behind me say my god he is gone - and in did I thought so too but he rose again at one end of the canoe attempted to hold on but could not and sank again. Now all thought he would never rise again but after several seconds which seemed as many hours, he came up again and caught one end of the canoe, and as the two were floated

down when the water was smoothe
squaaded in holding on. He had no
poles that could reach him, but
fortunately the eddy brought the
Canoe near shore & we succeeded in
drawing it in and assisting him
out. He was more dead than alive
but glad to escape with his life.

On examining the Canoe we found
one whole end was torn out.

At 6, Tough 67.5. Mst B. 58. Wind
N. Clouds. ground covered w/ snow
Camped with Assiniboines. Saw duck
in flocks today

Saturday June 16th

Rained from daylight till 9. o'clk A.
M. when it broke away a little and the men
repair the canoe which they barely done
in time to make our portage round the
falls before dark. Temp. at 9. o'clk 52 F
2 P.M. 57.5. mod. Clouds E. 1 M. Course N.E.
Find growing Ribes prickly (R. Cynosbati) fruit

(Corvus Canadensis) Water bird (Betula
Gadwall) Pasper bird (Betula Passerina)
Blk & white Sparrows red & white fox, Bob
cat (Lynx) Quercus) Lc. At 12. o'clk
Temp 76. Mst B. 61. Wind S.E. Clouds 2. N.W.
Course East S.E. After men had carried all
the things up to the upper end of the portage
& S. Mc R. myself started up leaving the men
to come on with the Canoe. The distance
of this portage is about 100 yds, that being
has being smooth over rocks which rise about
20 feet above the river. They are at high not
for have been subject to be overflown by the
and are consequently and into deep chasms
and have fast holes which are so overgrown
with grass, mosses, shrubs and other
vegetation that is great danger of falling into
them. In addition to this all these rocks
are also densely clothed with a forest of old
& of young cedars, which together with
the undergrowth renders the surface of the
Country so damp & shady that it breeds

Millions of Muskitoes. After arriving at the Terminus of the Portage I was soon compelled to fire off a muskito bar immediately. We had only been here a short time when we saw the men coming with the Canoes, and from their alarmed looks we conjectured in a moment that something had happened. As they came up we discovered to our utter astonishment that they Canoe was almost broken in two, being cracked quite across about 11 feet from one of the ends. The Portage is 8 miles, from where we had purchased it, had represented it to be so new and sound, but we now discovered it to be old and nearly rotten. Here we are in a pretty fix some 40 or 50 miles above the most dangerous rivers of the North with, with some 2000 lb of Camp equipage with as good as no Canoe. all caused by the false representations of Mr. B. who had imposed upon us as a worthless Canoe for which we had paid him £24.

what to do we did not know. However after some little further examinations, we found that the frame of the Canoe was good. Collom on of the half breed Voyageurs, thinks if he can find good birk bark he can mend it. After some little searching Collom and Xavier returned to camp with bundles of the rock Spruce (Abies) with which to sew the bark of the Canoe (Two mistays called by the Voyageurs (mis-tah-yah) they say they think they can find plenty of good Bark in the morning. At 6.40 P.M. Therm 69. Wind back 60 wind S.W. 1. Clouds 2. W. course S.W. 1.

Sunday June 17th

Morning Nearly Clear. Therm at 6.30 A.M. 60 and B. 60. Wind O. Clouds 1. W. course —

Collom & Xavier were out in the hills by daylight this morning after birch bark — returned at breakfast time with plenty of good quality and are now at work repairing the Canoe. Spent the day in examining the soundstone at the Portage

second Mist we had to make our portage
The river Road is generally about 100 yds
wide is here walled in by perpendicular rocks
and not more than 40 feet in width. The
rocks on the left being only about from 15. to 20
ft high & those on the Right about 70 feet
Those On the left are everywhere divided
(even on the highest part) with fort Rocks, some
of which are 15 feet deep and 12 feet across the
top, whilst others are as deep and not more
than three feet across the top. The substance
& nature of the rock are about the same
as the Rocks below. I noticed on several of
the deep chasms and fortress large masses
of Ice, some of which I have no doubt
weigh 50 or 100 hundred tons. From the
downs with which this Ice seems to mix
I would judge that it commences here at the
Summer. At ½ P. 8 AM Temp 48. Mist Calm
Wind S.W.3. clouds 4. Course 5 4

Men are preparing very early refitting
Canoes. Fry Smith Cook have already

to start tomorrow. At 7. A.M. Temp 73°
out / Bull 68. Wind S. 2. clouds 6. Course S.E. 4

Monday June 18th

Thunderstorm about day light this Morning
Continued to rain till 9 A.M. at which
time Temp 66.5° W. B. 66. Wind S. 1. clouds 6.
Course S.E. 5. Mosquitoes more this morning
than I have ever seen them in my life. The
Voyageurs also say they have never seen them
so numerous. The rock Common here
are The Loons, Ospreys or Fish Hawk
Mountain Quails & Spruce Grouse all
over the Country here

The whole day employed in repairing the
Canoes. At 12. P.M. Temp 77. W.B. 74 Wind
S.E. Clouds 5. Course S.E. 4 At 6. P.M. the Thermometer
Temp 77. W.B. 72. Wind S.E. Clouds 6. Course
S.E.

Tuesday June 19th

At 6. A.M. Temp 70. W.B. 70 Wind S.E.
Clouds 5. Course S.E. At 12. P.M. the
Temp 83. W.B. 74. S.E. Wind E. 2. clouds 5

course S.S. The men having now completed the Canoe, It was agreed that Mr C. & myself should go on up with the Canoe & the men to complete the observations, whereas Mr Pratten should remain with the men tent and all the superfluous stuff & days provisions. We had only progressed about ½ a mile when we came to one of the worst rapids we had seen. The river here more than 40 to 50 feet wide was obstructed in many places by large rocks, 25 feet on R. 10 on L. The whole body of the river finding through this narrow gorge with inconceivable velocity for a distance of more than a mile, and the shore on either side being so rocky, that we were afraid to undertake to make a portage round the rapid with our old canoe. After having made 3 short portages we concluded to abandon the Canoe of trying to ascend any higher with the canoe, but that on tomorrow I should take two of the men to carry 3 or 4 days provisions on their backs and go on up on foot to complete the observations above. This being determined upon we went back again to camp

Alt. B. Temp 52. W. B. 74 Wind S. 1, clouds 1. S. W. Course S. 4.

Wednesday June 20

Morning clear, Alt. A. Temp 70. W. B. 67. 1 mile. Clouds 0. At 7 A. M. took leave of the Voyageurs, (Bottom & Olivy) as agreed upon yesterday, as Parkenwood & 3 days provisions and started on foot to try and ascertain how far the Sandstone extends up the river. After leaving camp we started on up the valley nearly due N. but found the river had ~~turned to the E.~~ so that walking up by batteaux amongst the fallen Trees, loose rocks &c. we rounded the hill, which I supposed to be about 80 to 90 feet above the River. Sandstone appeared all the way up. On reaching the summit we discovered the land to be good, smooth

Sugar maple, Red do, mountain do
Poplar Birch, Red do yellow do, Canoe
birch Black ash, Large do. with
a few large white & Red pines, Also balsam
White & Black Spruce. The underbrush was
Red dominated as you know the Hills
Saw boulders of white & Red granite, from
Large ones that I mentioned chiefly composed of
Feldspar & Hornblende. Occasionally granite

After we had gone on say 12 miles or
heard on our left the roaring of a water
fall & [illegible] higher up than that
seen yesterday we ascended to the valley of
which we were through a very marshy bottom
to it. It proved however to be the same
I had seen yesterday at the head of the rapids
we had to ascend with the canoe
from a point we selected apparently of a
convenient form and probably 150 yards
distant we had to cut off from the left side
by a portage of the river. On the right side
of the Lake [illegible] although there is a [illegible]

of snow or 8 feet, there is one perpendicular
fall. On the left side, a little above the fall
there is a fall of 3½ feet perpendicular.
As far as I could see down the river below
the Lake and the river is walled in by perpendicular
sandstone cliffs on the left say 10. feet
and on the right 25 & 30 feet above the water
line. Through this narrow gorge (50 to 60 feet)
the whole volume of the river rushes with great
velocity. Nothing I could say in such a narrow
mind, through my pencil often would.

After leaving this place we ascended the Hill, (at the south end of the Lake)
after which we had through the same
kind of an Upland Country already described
in a N.E. course very fine timber skirting
the valley in sight on our left, when we
descended the valley turns due North, Finally
on in that direction some three or 4 miles
we came to a small stream, with steep high
of sandstone 10 feet high on each side. At
4 o'clock we about noon we halted &

dried leaves. The sandstone here is in very thick compact strata. How much are we limited above the Kettle river at this place we could not tell, as on more out in sight of its valley. Save in the valley of the Little several large tributaries of granite rock and felspar and others of sandstone felsopar. Found this in the little valley, chiefly red stone & Coarse book.

After crossing this small stream & going up out of its valley we turned to the N.W. In order to be close on where we left the river. We had gone in this direction but a few hundred yards when we discovered we were descending a very gentle slope into Kettle River valley along this slope great numbers of large irregular shaped compact, coarse grained granite rock which seems to have at the falls of the Grand Forks have come from where we found brought again on the back of the river. The place where we found it was

here been elevated more than ten feet above little stream which would make the water [illegible] above the level of this plain. The River here we saw as we could see up and down, was about 100 yds wide with a rapid current. Crossing on up parallel with the river, we soon discovered the general elevation of the Country was not much so much above the river as before again being compelled to leave the river after going about 2 miles began up an ascent to the highest point of the country about 100 or 150 feet above the River, we found nothing any sandstone - saw many boulders of the trap growth here, some of which were 6 or 8 feet in diameter with a flat top perfectly

After going on some three or four miles further in a N.W. direction we found the bluff stops to have run out the slope to prairie stood on began to pass and wandered away from the valley

and turning its course to the [illegible] Tennessee Country which has since been called the Cumberland Country. Passed over a ridge of land 20 feet wide and 5 to 8 feet high crossing a fork of the North. Course down this fork about [illegible] miles when we came to the Little [illegible] River on the margin of which we found the appearance of limestone.

The highest part of the [illegible] bearing [illegible] East about 6 Miles from the river [illegible] South runs nearly parallel with the river [illegible] Course down this fork

F. B. Meek in a/c with
A. T. Shumard Capt &c

F. B. Merk Dr

May 11	To cash from D.S.	10	00
" 12	" "	8	00
" "	" "	70	00
13	To Amt Pd for Blankets (Elbs)	4	75

Counter Cr

May 14	By Amt Pd Mr Patten	31	85
" 15	By Passage to Dubuque	5	00
	By Exp. at do		75
" 16	By Pass from Dubuque to Elkport	6	00
X 24	By horse hire at Volga	4	00
X	By exp. of towing horse	2	50
X	By Amt Pd for canoe	15	00
	By Passage to Harmony	4	50
	By Exp. at Harmony	3	25
25	By Amt for 6 Months Board	60	

Alabama Specimens in sandstone below
Mountain Island near the bed of Mississippi

My Dentalium Ohioense (now on a Lepton)
Cast) from Mr Conrad's & Natchitoches.
The other I have not found upon Ouachita
as Stripa Pisca

The beautiful corallina is abundant at
Salina is Coscinopora Sulcata

My Fine Specimens from Alabama are
P. Marcoui also some fine Casts
of Mississippi

The large Shells so common at the
Rapids of the Mississippi are Spirifer
Striatus

Dr Owen Calls all the Species in Cary
Cobbs Limestone except 6 Conchifera
the Chaetetes Lycoperdon and the
Others Similar to the Specimen I
called Chaetetes Lycoperdon he
calls Favosites Lycoperdon

The Spiral productus found at Bonaparte
is the Productus Semicirculatus

The large Shell of Mr. Kistlers is
not an Ammonite but a
Nautilus

The long bivalve found at Bon
harbour is a Modiola —

Hugh Miller after enumerating
the various advantages derived by
England from its Coal mines remarks. "If a patch containing
but a few square miles has done
so much for central England,
what may not fields containing
many hundred square Leagues do
for the United States"

first imp. of England into Physics
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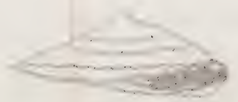

This shell (by S. G. G.) from
Mexico is Solarium

Two Shells by E. B. C. from Mexico are Oliva –

My lump of coal from the South Osage River by Rowdabaugh is the Brown Coal

My Astrea by John Gipson is Dan. A. Favorites

[illegible] on some up Last Fork Bear Lake
camped in the day— Rain Last night some
hail fragments fine Rain, killed all the Fowl and
nearly Exhausted the Hunters returned to the
Lake looks nearly like a Pleasure Family, Some
Fine Rain Mountains appear in Bloom— Hail fine
warm Pleasant Evening

After a very boisterous night during
which we had Rain many Showers during
mid night— Wind west with Fine pleas-
ant day Sunday Encamped at 3 Oclock PM. Last
Land of our Journey— Many all Fine Creek we
Crossed Today by Distance of 20 miles

Friday June 22.

We set off with Sunday at 8 Oclock A.M.
passed 2 Islands & Several Small
Creeks, Encamped at 7 Oclock P.M. on
Some Low Ground the Lower falls of
the Columbia 12 Miles Distant passing 3
Portages one the Distance, Passed at

12 Oclock at the foot of the Last Portage
Encamped P.M. Wind W. Cloudy 2 Snake
Indians Came on Horse back about Two Miles
from this Encampment Left a Pair of
Moccasons & Pompeys Pen Knife with
Some Beads & Trinkets for the Indians
Wind W. Cloudy Encamped on the Lard Side
of the River Passed 3 Islands & Several
Creeks on the Stard Side Encamped P.M.
Saturday June 23rd

Sunday last did not rain last night
Wind W. Cloudy Encamped Passed 2 Islands &
5 Creeks on the Stard Side 7 Miles below
Some Indians on the Rapids— Stopped at
the Lodge Camp of Each where we got the
Some Provisions we Encamped on a Creek up a Valley
Many Indians Came down, Passed Some Rapids,

Encamped at Mouth of Kettle Creek
of the N. Side, Saw Some on Horse back
(Indians) Drew Small Rope Full Fruit
Today ( ) very abundant along
margin of River River wide with Islands Shallow
with Boulders in Bottom.

Wind West Above the mouth of Kettle Riv
near the edge of the water on the Right Shore

We passed out a very large expanse of flat dense beautiful specimens of Abietinaria stuffed on the R. shore is an Alnus-like in appearance grows to 40 ft.

Came on up about 12, on. above the mouth of Kittle R. anchored on the Right shore in the edge of Picea. Country very similar. Coming along the mouth of Kittle R. remarkably low the highest elevations not being much over about 10' or 12 feet above the river. On the R. shore there has been cut and drained with scattering cuts of tall prop with numerous old dead Picea. River wide - many Islands. Mouth about Same as seen on this river below the mouth of Kittle. At 7 P.M. Lat 57° 12' 30" N. Long 131° 40' W. Course S. 70° E. Temperature Left Tanjung now 47° the Pine pointing northward to the North 30° west appearance

Sept 3rd Day 24

At 6 A.M. Lat 57° 12' N. Long 131° 30' W. Wind S. Clouds 0. Started at 7 A.M. About five or six miles up am on the Right shore bank of sand and gravel about 40 feet above the ocean the occasional exception of the entrance of the valley of the river. Has a barren infested ground Red white pine, hemlock Sitka Spruce (P. Banksiana) with a few scattering cedar. Saw in flower here along the Sandy shore Nemony birdseed (Caltha palustris) Spider Wort (Tradescantia virginica) and Lily with some beautiful Pitcher

Plants on portion of one step in place of a few scattering cedar others on the left shore in addition of cedar in place to deep. Low bottom covered with the usual growth with the exception Tamarack swamp. Out of the bottom five ravens. Mind 1 on back of which we noted there is a continued wall like growth of tall Tamaracks indicating the following the course of the river for a long distance at a time. a low wet Picea covered with Tall Hemlock and a low growth of bayberry Myrica Pensylvanica in flower. Lunch at 12, 78° W. 60°

[illegible] [illegible] Course S. W — [illegible] [illegible]
[illegible] [illegible] [illegible] [illegible] [illegible]
on Left Kettle River

Stopped on the right shore in a pretty grove of Elk ash (Prickly ash - Pacific) Linden [illegible] at 6 o'clock Camped for the night having seen [illegible] dinner about Nine Miles making about 20 during the day. Passed the mouths of several small streams — [illegible] Growth about the same seen before dinner. No rocks seen in place.

Provisions pr Month pr man

Flour	30 to 40 lb	120
Pork	30 to 40 lbs	120
Dry Bread	8 lb	6
Apples	8 lb	9
Beans	2	40
Rice	2 to 4 lb	6
Sugar	8 lb	5
Coffee	2 lb Ground	3
Tea		15
Salt	½ lb	3.23
Powder	1 ℔ to the Gun	15
Shot	6 ℔ to the Gun	2)38.3
		171

F 1.m
Lower pebbly sandstone
F 1.l Lingula beds Falls St Croix &c
F 1.c Obolus bed opposite the old mouth of Blk River with large Trilobites
F 1.d 1.st Trilobite (Buffalo R. 50 ft above mouth) fossils similar (especially the forked Frilled Trilobite Obolus & flattened conical bodies) to the 2d Trilobit bed near the mouth Blk River
F 1.b 2d Trilobite bed same seen just below falls St. Croix 4 Miles below Mountain Island mouth R
F. 1f Coarse (green generally) lingula grit 30 ft above Lake St Croix at mouth Willow River. also at Lawrence Creek near falls of St Croix
F. 1.g. Brown Spirifer rock-Coarse grained. Mountain Island
Lagrange Mill 20 above mill sets on sandstone about 10 ft thick

F 1.h 3d Trilobite bed grayish sandstone with very large Trilobites - mouth of Minnikta
F 1.i green sandstone under the fucoidal layers at the (Marine Mills - head of Lake Pepin &c
F. 1.k. fucoidal layers - Marine Mills
F. 1 1/2 4 Trilobite bed - Stillwater
F. 1. 1/2 5. Trilobite bed - Marine Mills -
F 2 Sandstone with casts of Swomphalus minnesotensis - Franconia Ls Sandstone interstratified with siliceous layers oolitic layers & thin magnesian limestone Sandstone sometimes very white as at Orwith E. Bluff St. Peters R.
F 1. 2 Magn Limestone

Sometimes Contains Copper
and Lead-as at Ogdens diggings
to Kaposa River - Upper part
chiefly contains Encrinites
and Crystalized Iron as on
the Rafferd tract opposite
the mouth Cabbispenny

ent for Shells fossils &c

olve Gum Shellac in
Troy Alcohol

ags for fossil painting -
glue water & Span whiting
rough glue to not crack and
rough to prevent whiting from
ing off. - Glue dissolved in
r - mixed with whiskey

Rebought coral &
f. Ocalina -

sometimes contains
and Lead-as at Ogden
to Kaposo River - Up
Chalky contains Em
and Crystalize Lon
the Rapid Trac
the mouth Coke Spe

Cement for Shells fossils &c

Desolve Gum Shellac in
Stroy Alcohol

Canvas for fossil painting -
Size - glue water & Span white
Just enough glue to not crack and
yet enough to prevent whiting from
Rubbing off. - Glue desolved in
Colour - mixed with whiskey

Vie Rebuyt coral ü
a sp. Oculina

A connected plot of Surveys on the St. Croix above the 3d Correction line - embracing all the Surveys on the St. Croix Snake and Estates rivers. —

Prince Maximilian
type Weed

h	m	a	L		S	A	Le
9	40	7918	494		75	75	75
			10				
			4				

	2000	75.00
	3000	8.00
	5000	10.00
		88.00
360	92.75	31.85
	7800	56.15
	75	60.
	515.40	40.00
	90.40	5.8
	435.40	800
	60	
	375.40	

Tank N B
5 7 5 6

the canal I marked Amphistegina is a Cayophillia

555

S. B. Mack